

Name _____

9-12 all Mixtures

1-4, 14 all Distance

5-8, 13 all Work

Algebra 2
Unit #7
WS #13

1. It takes a person the same time to walk 10 mi as it takes a car to travel 15 mi in heavy traffic. If the car is traveling 3 mi/h faster than the person is walking, how fast is each traveling?
2. It takes a train the same time to travel 450 km as it takes a bus to travel 300 km. If the bus is traveling 30 km/h slower than the train, find the rate at which each is traveling.
3. Gilda can jog 5 mi downhill in the same time that it takes her to jog 3 mi uphill. Find her jogging rate for each way if she jogs downhill 4 mi/h faster than she jogs uphill.
4. Tony can type 100 words in the same amount of time that it takes Fred to type 75 words. If Fred's typing rate is 8 words per minute less than Tony's, find each person's typing rate.
5. Diana can mow the lawn in 20 min. Joan can mow the lawn in 30 min. If they work together, how long will it take them to mow the lawn?
6. Arthur can edit 15 essays in 10 h. Debra needs 15 h to do the same job. If they work together, how long will it take them to edit the essays?
7. Mr. Gomez must leave in 10 min to drive to his office, but he is snowed in. Sam claims he can shovel the driveway in 20 min and Paul claims he can do it in 15 min. If they shovel together, will they be able to clear the driveway before Mr. Gomez has to leave?
8. Fran can wash the car in 30 min. Gail can wash the car in 40 min. Working together, can they wash the car in less than 16 min?
9. A small tank contains 500 L of a 5% salt solution. How much water should be added to obtain a 2% salt solution?
10. A big barrel contains 300 L of a 6% solution of lawn fertilizer. How much water should be added to obtain a 5% solution?
11. A pharmacist has 60 mL of an 8% alcohol solution. How much water should be evaporated so that the solution that remains is 10% alcohol?
12. A chemist has 80 mL of a 6% acid solution. How much water should be evaporated so that the solution that remains is 8% acid?
13. Machine A can do a job in 10 h, machine B can do the job in 15 h, and machine C can do it in 20 h. If the three machines are being used at the same time, how long will it take to complete the job?
14. A man drove his car 132 mi before the water pump broke. Then the car was pushed 1 mi to a gas station. The man could drive the car 12 times faster than it could be pushed. If the total trip took 3 h, find how fast the car was pushed.